REMARKS

As the prosecution history is lengthy, it is worthwhile to consider the ample file history as the detailed responses are helpful in understanding the present invention and distinguishing it from all other references. It may be helpful for the Office to review the expansive record when considering this response.

Personal Interview

The Applicant thanks Examiner Patterson for the Personal Interview held on July 29, 2004 between Examiner Patterson, Inventor/Applicant Marston and Attorney Asmus. Marston provided examples of packaging and demonstrated the environmental state of the packaging environments in relation to the present invention. As noted in the Interview Summary, it was agreed to amend claim 1 and provide a declaration in support therewith which should distinguish the present invention. An agreement was not reached as the Examiner was uncertain whether the amendments in relation to the placement of the microperforations would require a new search or be considered a new issue.

Applicant respectfully points out that the description of a registered target area being a finite area has been crystal clear and consistently within the claims from the original application filing and clearly illustrated in the drawings. There have been ample discussions of record on this matter and Applicant asserts that the present amendment does not require any additional search or introduce any new issues. The Response filed 10/18/2002 included a Declaration and multiple Exhibits showing the present invention product packaging. On page 4 of the 10/18/2002 Response, the Applicant succinctly described the concept of a registered target area in comparison to non-localized distribution of microperforations throughout the packaging material. The Examiner's request for additional wording in the claims to state that the registered target area is a finite area and the microperforations are not distributed throughout the packaging material is redundant and does not alter the claimed element as the meaning was already established in the filed application.

Thus, Applicant respectfully requests that the Office review the present file history as it is believed that the location of the microperforations being in a registered target area and in a finite area and not distributed throughout the packaging was clearly established.

STATUS OF CLAIMS

Claims 1-14, 21 and 22 are pending and stand under final rejection from the Office Action dated 6/4/2004 and for which a Notice of Appeal has been filed herewith. Claims 15-20 are withdrawn due to an election requirement.

STATUS OF AMENDMENTS

This divisional Application was filed on 6/8/2001 including IDS materials. There are two related cases, both of which have already issued, namely:
U.S. Pat. No. 6,441,340; and
U.S. Pat. No. 6,730,874.

A first non-final action was mailed 7/18/2002 rejected the elected claims 1-14 under 35 USC 112, 35 USC 102 by U.S. Pat. No. 6,010,293 (DeMoor) and 35 USC 103 by DeMoor and in view of U.S. Pat. No. 6,376,032 (Clark) On or about June 20, 2002, Applicant made a telephone election for claims 1 – 14 and claims 15-20 were withdrawn from consideration.

A first non-final response was filed 10/18/2002 in response to the first non-final action dated 7/18/2002 including a Rule 132 Declaration and exhibits A-J, letters 1-5 and five articles to aid in the understanding of the subject matter of the invention. The exhibits were actual films showing existing films and the registered target microperforations of the present invention. Test data and actual results are included therein. Claims 2, 10, 11, 13, and 14 were amended; claims 15 – 20 were canceled; and new claims 21 and 22 were added.

A second non-final action was mailed 1/3/2003 withdrawing most rejections and introducing new rejections. An additional reference, U.S. Pat. No. 5,258,156 (Kurachi) was added to the previously cited art.

A telephone interview was conducted on 1/29/2003 and it was agreed that microporous materials were distinguishable from microperforations and claims amended to incorporate 'drill hole' structure into the claims. A second non-final response was filed on 1/30/2003 in response to the non-final action dated 1/3/2003. Claims 1, 8, 10, 11, and 12 were amended. Supplemental IDS's were filed 2/5/2003 and 2/27/2003

A final rejection was mailed 5/15/2003 withdrawing most rejections but introducing new rejections and introducing U.S. Pat. No. 5,919,547 (Kocher) and U.S. Pat. No. 5,492,705 (Porchia).

In response to the Final office action dated 5/15/2003, and subsequent telephone discussions reaching a tentative agreement of allowability, Applicant filed an After Final Response on 7/9/2003 and a Supplement on 7/28/2003. The After-Final Response amended claims 1, 10, and 11.

An Advisory Action was mailed from the Office on 7/30/2003 stating new matter was introduced. Further telephone discussions with the Office gaining tentative agreement of allowability resulted in a Request for Continued Examination (RCE) being filed on 8/15/2003, thereby entering the After Final Response and also further amending claims 1, 10, and 11.

A non-final Office Action was mailed on 12/3/2003, maintaining the rejection based on U.S. Pat. No. 5,919,547 (Kocher) and U.S. Pat. No. 5,492,705 (Porchia).

A telephone interview was conducted on 2/27/2004 in which a tentative agreement was reached. A non-final office action response was filed 3/1/2004 in response to the office action dated 12/3/2003, and Claim 1 was amended. On 5/26/2004, the Examiner contacted the Applicant's attorney and noted that the prior rejections were overcome and a further search was underway.

The present final rejection is primarily based upon U.S. Pat. No. 4,886,372 (Greengrass), although U.S. Pat. No. 5,919,547 (Kocher) and U.S. Pat. No. 5,492,705 (Porchia) are again referenced.

The present After-Final Response amends claim 1, 10, and 11; cancels claims 5 and 13, and submits arguments in support of allowance. A declaration is submitted herewith in relation to Greengrass to further augment and explain Greengrass in distinction to the present invention.

Applicant wishes to note that the Greengrass reference upon which the Office relies upon was cited in the Applicant's Information Disclosure Statement dated 6/7/2001 via the Greengrass reference GB2200618A. The portions cited by the Office in the latest final rejection are in this previously cited reference for which the Office acknowledged in the Office Action dated 7/18/2002. Furthermore, the Applicant specifically addressed this patent in the background section of the specification and explained some of the distinguishing attributes.

These present response should be entered and place the application in condition for allowance for all claims. In the alternative, the present amendment should be entered to place the application in better condition for appeal and should be entered. No new matter is added.

SUMMARY OF INVENTION

The present invention relates to packaging material for respiring or biochemically active agricultural products and commodities such as fresh fruits, fresh vegetables, fresh herbs, and flowers (herein referred to collectively as produce or fresh produce) and more particularly to microperforations establishing drill holes in a registered target area in the packaging materials to avoid occlusion, wherein the size/shape/number of microperforations are used to modify/control the flow of oxygen and carbon dioxide into and/out of a fresh produce container such that the atmosphere inside the packaging material is an optimal state for the particular produce.

ISSUES

Whether claims 1-4, 8-9, 12-13 and 21 are patentable under 35 USC 102 as being anticipated by U.S. Pat. No. 4,886,372 (Greengrass). Furthermore, whether claims 2-4, 9, 12-13 and 21 are patentable under 35 USC 103 over Greengrass and in view of Kocher. Also, whether claims 7, 10-11 are patentable over Greengrass in view of Kocher and further in view of U.S. Pat. No. 5,492,705 (Porchia).

THE REFERENCES

The following references have been relied upon by the Office for the present final rejection.

Porchia	U.S. Pat. No. 5,492,705
Kocher	U.S. Pat. No. 5,919,547
Greengrass	U.S. Pat. No. 4,886,372

BRIEF DESCRIPTION OF THE REFERENCES

Greengrass (U.S. Pat. No. 4,886,372) discloses a mechanical perforation system which is also described in UK Patent Application No. 2 200 618 A and European Patent Application No. 88301303.9. The mechanical perforating system makes perforations in PVC films for produce packaging. In a typical application, rods with pins embedded into the surface of the cylinder are used to punch holes in the film. For each produce item to be packaged, the rod/pin configuration is manually changed so that the number of perforation rows in the film, the distance apart of the rows, the pitch of the pins used to make the holes, and the size of the holes are adjusted to meet the specific requirements of the produce.

The requirements as to the size/shape/number for the microperforations in Greengrass to control the package atmosphere are described in terms of empirical guesswork related to delayed "ripening" – too many holes results in dehydration while too few holes results in excess condensation. In contrast, the present invention describes and claims the proper size/number of

microperforations so that the end product has the correct size/shape/number of microperforations in terms of the oxygen and carbon dioxide transmission rates which approximately matches fresh produce respiration rates.

The Greengrass hole sizes are described in the various embodiments and claimed as being 20 mm to 60 mm. In contrast the microperforations of the present invention are described and claimed as being in the range from 0.11mm to 0.4 mm. While Greengrass cites that the microperforations could be as small as 0.25mm, it does not employ this hole size for any embodiments and specifically describes and claims large hole sizes.

The Greengrass patent cautions that the produce should be placed in the package so that the perforations are not occluded and that care should be taken to prevent taping over the perforations in the film. However, the Greengrass perforations are not in a registered target area on the package, but distributed throughout the main body of the plastic film. Greengrass perforations are in rows that extend along the entire length or width of the packaging film. Thus, Greengrass uses a mechanical punch to make very large size holes to establish some atmospheric condition within the package and does not place the microperforations in a registered, finite target area.

Kocher (U.S. Pat. No. 5,919,547) is a laminate structure having layers of gas-permeable and gas-impermeable layers wherein the laminate that is subjected to delamination thereby providing a rapid ingress of air into the interior of the package. Kocher provides definitions in Column 4 that help explain the Kocher 'laminate' and a thorough explanation of the laminate usage. "In a preferred embodiment of the invention, the laminate provides the lid for a package and delaminates into a substantially gas-impermeable portion and a gas-permeable portion, with the gas-permeable portion being bonded directly to the support member of the package. In this manner, the gas-impermeable portion may be peelably removed from the package to allow atmospheric oxygen to enter the interior of the package. In a particularly preferred embodiment, the gas-permeable portion is provided by perforating the delaminatable, coextruded film and bonding such film to the support member so that, when the laminate is caused to be delaminated

within the perforated, coextruded film, the perforations are exposed to the ambient atmosphere and thereby allow for rapid ingress of oxygen into the interior of the package." (col. 4 lines 10-24)

Kocher is intended to be a sealed barrier package until a delamination occurs and then have air ingress into the container via the gas-permeable layer and the perforations so that the interior of the container has the same atmosphere as ambient. This multi-layer approach of Kocher is distinguishable from the present invention. While Kocher does discuss the use of 'perforations' used in conjunction with the multi-laminate layers – the usage pertains to removing the outer layer (lid) to allow air to flow through these perforations and gas permeable layers in a rapid manner. The perforations of Kocher are shown in Figure 6 and described in Column 17. The perforations 66 extend thru multiple layers so that when the lid is delaminated and removed (See Figure 7) the air can flow into the package via the perforations as well as the gas-permeable layer. This provides a 'swift ingress of atmospheric oxygen' (col. 17, lines 57). The described embodiments are for meat packages that are delaminated in the stores to provide a red coloring from the oxygen introduced through the microperforations. There is no control of the air flow and no control of the internal atmosphere in the container until the delamination occurs, and there are no microperforations in a registered target area.

Porchia (U.S. Pat. No. 5,492,705) describes a packaging bag with microholes throughout that is "independent of product, shape, amount and transpiration characteristics of stored produce as opposed to controlled atmosphere which generally is designed for each specific packaged product." (col. 2, Lines 19-22) Thus, Porchia admits that it is not intended for controlling atmospheric conditions for specific oxygen/carbon dioxide rates.

The Porchia packaging "controls the weight loss of produce" and "localized condensation in the bag" by controlling the water vapor transmission rate of the package. Controlling weight loss for fresh produce involves establishing a water vapor transmission rate so that there is not too much moisture in the bag to cause slime formation of the tissue, and at the same time, not allowing too much moisture to escape and result in wilting/desiccation of the produce. This requires a large

number of large holes in the bag to get the Padres Number needed. Thus, Porchia is specifically addressing water vapor transmission – not the oxygen/carbon dioxide concentrations as in the present invention.

Regarding location in a registered target area as described in the present invention, Porchia helps by defining their distribution. "By "uniformly distributed" it is meant that the microholes are substantially identically and substantially evenly spaced apart from each other over the entire surface area of the web film or bag." (col. 4, lines 37-40) "To obtain the beneficial effects of the present invention, the microholes should be of a uniform size and uniformly distributed throughout the surface of the bag." (col. 4, lines 34-36).

Therefore, Porchia does not control the oxygen and carbon dioxide concentration inside the bag and they also do not register the microperforations in a well-defined target area on the bag as in the present invention.

THE REJECTIONS

Withdrawn Rejections

The Applicant thanks the Office for withdrawing the rejections as follows: 35 USC 102 rejections for claims 1-4, 8-9, 12-13 and 21; 35 USC 103 rejections for claims 5-6, 14 and 22; and 35 USC 103 rejections for claims 7, 10-11.

Claims Rejections - 35 USC §102(b)

The Office rejects claims 1-4, 8-9, 12-13 and 21 under 35 U.S.C. 102(b) as being anticipated by Greengrass et al (US 4,886,372) (See also Greengrass et al GB2200618).

The Office states that Greengrass discloses improved packaging for establishing optimum atmospheric conditions for respiring produce and references the background section of Greengrass Col 1, lines 21-32. As per background on CAP and MAP and various attempts for

packaging, the Applicant directs the Office to the background section of the present application which provides a much better presentation and explanation of these materials. (see present application Page 1 line 27 – Page 7 line 10)

The Office also states that Greengrass comprises a set of microperforations which are drill holes on a target area of the polymeric material and that the microperforations control the atmospheric conditions within specified oxygen and carbon dioxide concentrations (less than 20.9% oxygen and greater than 0.03% carbon dioxide).

Applicant respectfully disagrees and sets forth a detailed explanation establishing the distinctions. It may be useful for the Office to have a better understanding of the Greengrass invention by referring to the background section of the present invention beginning on page 5 line 7:

> UK Patent Application No. 2 200 618 A and European Patent Application No. 88301303.9 describe the use of a mechanical perforating method to make perforations with diameters of 0.25 mm to 60 mm in PVC films for produce packaging. Rods with pins embedded into the surface of the cylinder are used to punch holes in the film. For each produce item to be packaged, the rod/pin configuration is manually changed so that the number of perforation rows in the film, the distance apart of the rows, the pitch of the pins used to make the holes, and the size of the holes are adjusted to meet the specific requirements of the produce. The produce requirements are determined by laboratory testing produce packed in a variety of perforated films. The invention does not disclose any mathematical method to determine the appropriate size or number of perforations to use with different produce items. In addition, the hole sizes, 20 mm to 60 mm, which are claimed, would be too large to effectively control the atmosphere inside packages containing less than several kilograms of produce. Furthermore, the complicated perforation method would cause lost package production time due to equipment (perforation cylinder) change-overs for different perforation patterns. In addition, the invention cautions that the produce should be placed in the

> package so that the perforations are not occluded and care should be taken to prevent taping over the perforations in the film. Since the perforations are not registered in a small area on the package, but are placed throughout the main body of the plastic film, the likelihood is high that perforations will be occluded by the produce inside the package or by pressure sensitive adhesive labels applied on packages for marketing purposes. When holes are blocked, the principal route for gas transmission through the film is blocked which leads to anaerobic conditions and fermentative reactions. The result is poor sensory properties, reduced shelf life and possible microbiological safety concerns. Therefore, it is important that perforations be registered in a well-defined area of the package where the likelihood of their occlusion during pack-out, storage, transportation, and retail display is minimized.

Thus, the Applicant was aware of the Greengrass invention, cited the patent in the Information Disclosure Statement and distinguished Greengrass in the background section. A further explanation is provided herein and supported by the Inventor Declaration submitted herewith.

Firstly, the perforations of Greengrass are not in a 'registered target area' as the term applies to the present invention. Applicant has also further described the registered target area as being a 'finite region' on the polymeric material. The term 'finite' is defined as being limited or confined – and in the context of the microperforations – it refers to the microperforations being in a small region as opposed to being distributed throughout the packaging noted in the prior references.

The Office cites from Greengrass Col 2 lines 56-62 – "It is preferable with the small number of openings necessary in the majority of retail packs, that they should be placed in such positions in said packs as to eliminate the possibility of product within the packs blocking the micro perforations or openings, thus reducing or totally destroying the performance of said packs." However, the invention described in Greengrass is for a linear run employing an arrangement according to: the arrangement number of lines; the distance of lines apart (mm); the pitch of pins (mm); and the size of hole (mm). (Col 3, lines 7-10; Col 4 lines 30-34). As is readily apparent, the

Greengrass punch system is not designed to register a target area on the packaging material and then place the microperforations in the registered target area. While Greengrass may express an intention to avoid blockage of the holes – the description and drawings illustrate linearly arranged holes throughout the packaging film - As noted in Fig 1, Fig 2, Fig 1B, Fig 3, Fig 4a, Fig 4B, and the film deployed in Fig 5. The perforations are in a line across the material and not registered in a finite region of the target area and therefore not placed to avoid occlusion. While the Office may wish to impart a registration scheme to place microperforations in a finite registered target area that is not uniformly distributed throughout the packaging – there is no support or discussion in Greengrass to support those arguments.

It may be useful to refresh the Office about the meaning of a registered target area. As already recited in the 10/18/2002 Response – "[a]s described in the present application, the registered target area is a well-defined location for the microperforations as opposed to the non-localized distribution of microperforations throughout the packaging material length and width, a condition which would make the microperforations subject to occlusion. If the microperforations are not localized in a specific area, they may be blocked by labels or occluded by package-to-package contact in case carton packing. Therefore, to ensure obstruction-free microperforations and controlled oxygen transmission rates, the placement of microperforations is accomplished as described in the present application. As noted in the specification beginning on Page 9, line 16, "[i]n the preferred embodiment, the optimal size, shape and number of the set of microperforations for the particular product is used for the registered target area. In most cases, the target area is a small identifiable area in an upper third or quarter of the package. More preferably, the registered microperforations are placed in a finite area that will not be occluded by produce or other packages during shipping and storage." And, the figures of the present application illustrate the placement of the microperforations in a finite target area. Greengrass does not support the finding of a registered target area being a finite region and the rejection of claim 1 is therefore traversed.

In addition, the holes of Greengrass are mechanical punch holes ranging from 20mm to 60mm as described in Greengrass Col 5 lines 30-40 and claimed in claim 3. The present invention has

demonstrated that the drill hole preferably range in the neighborhood of 110-400 microns. There are 1000 microns to a mm, so the Greengrass punch holes are in the range of 20,000 microns to 60,000 microns. Thus the Greengrass invention is clearly intended to employ perforations of a much greater magnitude than the present invention. In support of this conclusion, Greengrass states that "[i]t is possible that, for retain packs containing as little as 500 grams of produce, a single micro perforation opening as small as 0.25 mm in diameter per pack may be all that is required to delay ripening." Thus, a punched perforation of 250 microns was cited in Greengrass – but the Greengrass invention clearly teaches away from using a plurality of such smaller holes.

The examples described in Greengrass all support larger size holes, "wherein the arrangement number of lines/distance lines apart (mm)/pitch of pins (mm)/size of holes (mm) utilized is selected from the group consisting of: 11/25/50/60, 05/20/30/60, 01/00/50/20, and 03/25/50/20." (Greengrass claim 3) These punch holes of 20,000 to 60,000 microns are **not** sufficient, i. e., they are too large, for the control of the atmospheric conditions according to the present invention that employs laser drill holes in the range of about 110 – 400 microns. This is already stated herein and also set forth in the background section of the present application and further articulated in the Declaration submitted herewith.

The Figures of Greengrass – Fig. 1, Fig. 2, Fig. 1B, Fig. 3, Fig. 4A, Fig. 4B, Fig. 5 – all show holes that are visible in the displayed packaging thus supporting that these holes are very large. As clearly described in Greengrass, the arrangement of the punch holes according to the number of lines/distance of lines apart (mm)/pitch of pins (mm)/size of hole (mm) – the holes are uniformly distributed throughout the packaging and include a number of vary large size holes (20,000 to 60,000 microns). The examples disclosed patterns using microperforations with arrangements: 11/25/50/60; 05/20/30/60; 01/00/50/20; and 03/25/50/20. These large hole sizes would permit not only the flow of gas, but water and debris as well.

Furthermore, the claims of the present invention define a range for the O_2 Flux, wherein the size/number of microperforations are used to calculate the total cross sectional area of the openings needed to control the optimum atmosphere inside the package. Assuming a typical

packaging size, the cross sectional area of the openings in Greengrass is several orders of magnitude greater than that of the present invention. Thus, as explained in greater detail in the Declaration, Greengrass is **not** capable of the oxygen flow rates as described and claimed in the present invention, and can not provide a total O_2 Flux ranging from 150 cc/day-atm to 5,000,000 cc/day-atm as recited in Claim 1. Therefore, the rejection of Claim 1 is traversed.

In addition, the Office references the background section of Greengrass Col 1 lines 33-38 which states "[w]hen the levels of carbon dioxide within the pack has reached over five percent and the oxygen in the pack has been lowered to eight percent, the internal atmosphere within the pack has modified to an extent where the process of ripening of the produce or fruits has been significantly slowed." Thus Greengrass sets forth the proposition that the CO_2 levels should be greater than 5% and O_2 less than 8% in the background section, with little support or explanation as to accomplishing this goal.

As is well known, ambient air contains approximately 0.20948 (21%) O_2 and about 0.00355 (.03%) CO_2. The optimal atmospheric conditions for a wide range of fresh produce items is known to those in the art and published in texts in the field. The optimum atmospheric conditions according to the present invention are calculated such that there are concentrations in the approximate range of <20% O_2 and >1% CO_2 at refrigerated temperatures. Thus the present invention seeks to maintain a stable atmosphere for the respiring produce that is different than ambient air and within the range of <20.9% O_2 and >0.03% CO_2.

And – the present invention actually teaches how to obtain such a packaging environment and the resulting microperforated packaging and methods for making that packaging. Greengrass does not explain in any sufficient form how the size/number of perforations in the packaging material relates to the control or maintenance of optimal atmospheric conditions. Only the present invention describes a packaging material that is capable of establishing such an atmospheric state.

The present invention describes in a fully enabling manner, the product and the process for accomplishing the optimal atmospheric condition. The respiration rate of the fresh produce depends on a number of factors, including the produce type, variety, age, temperature of storage, the atmosphere it is stored in, and whether it is cut or whole. In the present invention, the respiration rate is matched to the oxygen transmission rate of the film provided by the size and number of microperforations in the film to establish an optimum equilibrium (stable) atmosphere inside the package that is conducive to reduced respiration rates and shelf life extension. And, different fresh produce items have different respiration rates and different optimum atmospheres for extending quality and shelf life. There is no teaching in Greengrass of the flow rate or the relationship of the atmosphere to the number/size of holes – mere speculation that some experimentation might conjure a better atmosphere is not sufficient to support the present rejection.

Greengrass fails to disclose any flow rate, any relationship to number and size of holes nor any description as to how one would contemplate establishing an optimal atmosphere in the package. Instead – Greengrass states that the number and size can be calculated by "scientific testing." And further provides no description of the testing procedure. Finally – the examples provided by Greengrass clearly teach away form the present invention and demonstrates that Greengrass does not provide the atmospheric conditions of the present invention. The teaching of Greengrass may provide some atmosphere – but it is certainly not the atmosphere described and claimed in the present invention. The Applicant submits that Greengrass is distinguished by the elements and the rejection is traversed.

In summary - the Applicant submits that the microperforations of the present invention being a a set of drill hole microperforations, wherein based on a number and a size of the microperforations, control and maintain an optimum atmospheric conditions within specified O_2 and CO_2 concentrations, wherein the optimum atmospheric conditions contains less than about 20.9% O_2 and greater than about 0.03% CO_2. Furthermore there is a total O_2 Flux ranging from 150 cc/day-atm to 5,000,000 cc/day-atm and wherein each of the microperforations has an

average diameter between 110 and 400 microns and the set of microperforations are placed in a registered target area on the polymeric material, with the registered target area being a finite region on the polymeric material.

Thus – the anticipation rejection cannot be maintained. Thus independent claim 1 is not anticipated and claims dependent thereof are also not anticipated. Reconsideration and allowance is respectfully requested.

DECLARATION (37 CFR 1.132) MPEP 716

In addition to the distinguishable attributes of the present claims that traverse the rejections, an Inventor Declaration is also submits that the Greengrass reference is not capable of establishing an optimal atmospheric condition based on the size/number of the punch holes provided by the examples. As one skilled in the art, the Declaration is provided to demonstrate that one skilled in the art would not readily determine the number/size of the microperforations via empirical testing and it would require undue experimentation. Furthermore, based on the examples provided, the Declaration demonstrates that the Greengrass teachings are not correct – providing further support that one skilled in the art would not readily calculate the parameters for the packaging as detailed in the present invention.

It is well established that there is a presumption of operability for an issued patent that requires a preponderance of the evidence to rebut this presumption. *In re Sasse*, 629 F.2d 675, 207 USPQ 107 (CCPA 1980). Furthermore, since the presumed that the patented invention would be operated by one skilled in the art, a certain degree of experimentation and adaptation would be permissible *In re Michalek*, 162 F.2d 229, 74 USPQ 107 (CCPA 1947); *In re Reid*, 179 F.2d 998, 84 USPQ 478 (CCPA 1950).

However, the examples described and claimed in Greengrass, the Declaration clearly shows that the Greengrass testing results for the number of lines/distance of lines apart/pitch of pins/size of holes is not capable of satisfying the criteria of the packaging material of the present invention.

As demonstrated to the Examiner during the Personal Interview, the measurements of the headspace oxygen and carbon dioxide levels visibly demonstrate the performance characteristics and establish that Greengrass is not capable of controlling and maintaining optimum atmospheric conditions within specified O_2 and CO_2 concentrations for the respiring produce. Greengrass is also not capable of establishing the optimum atmospheric conditions containing less than about 20.9% O_2 and greater than about 0.03% CO_2, wherein the polymeric material provides a total O_2 Flux ranging from 150 cc/day-atm to 5,000,000 cc/day-atm. Nor does Greengrass place the perforations in a registered target area. The Examiner had requested that the Applicant distinguish the registered target area from the prior references that distribute the microperforations throughout the packaging. Applicant believes that this is unnecessary as the term registered target area is already well-defined in the specification. However, Applicant has incorporated the further description of being in a 'finite area' which thereby provides definiteness that the microperforations are not distributed throughout the polymeric material.

As the Declaration clearly demonstrates, the Greengrass reference is distinguished from the present claims, and the rejection is traversed. *In re Crosby*, 157 F.2d 198, 71 USPQ 73 (CCPA 1946). Greengrass does not teach or suggest the present claimed invention as the hole sizes – recited throughout Greengrass and also illustrated in the figures – demonstrate that the large hole sizes were a feature of that invention.

Claim Rejections – 35 USC § 103

The Office has rejected claim 2-4, 9, 12-13 and 21 as being unpatentable over Greengrass in view of Kocher (US Patent 5,919,547). Applicant has carefully considered the Office rejections and respectfully submits that the claims, as amended and supported by the arguments herein, are distinguishable from the cited references alone or in combination.

Applicant wishes to respectfully remind the Office that it is impermissible to use the claimed invention as an instruction manual or "template" to piece together isolated disclosures and teachings of the prior art so that the claimed invention is rendered obvious, *In re Fritch*, 972 F.2d 1260, 1266 n.15, 23 USPQ2d 1780, 1783-84 n.15 (Fed. Cir. 1992). The Federal Circuit has also cautioned against focusing on the obviousness of the differences between the claimed invention and the prior art rather than on the obviousness of the claimed invention as a whole as 35 USC 103 requires. *See, e.g., Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1383, 231 USPQ 81, 93 (Fed. Cir. 1986), *cert. denied,* 480 USPQ 947 (1987).

As already established in the record, Kocher employs laminates or layers of gas-permeable and gas-impermeable layers. Using the terminology of Kocher – "In a preferred embodiment of the invention, the laminate provides the lid for a package and delaminates into a substantially gas-impermeable portion and a gas-permeable portion, with the gas-permeable portion being bonded directly to the support member of the package. In this manner, the gas-impermeable portion may be peelably removed from the package to allow atmospheric oxygen to enter the interior of the package. In a particularly preferred embodiment, the gas-permeable portion is provided by perforating the delaminatable, coextruded film and bonding such film to the support member so that, when the laminate is caused to be delaminated within the perforated, coextruded film, the perforations are exposed to the ambient atmosphere and thereby allow for rapid ingress of oxygen into the interior of the package." (col. 4 lines 10-24)

Kocher is specifically intended to be a sealed, gas-impermeable package until a de-lamination occurs and then have air ingress via the gas-permeable layer and the perforations. This multi-layer approach of Kocher is distinguishable from the present invention. While Kocher does discuss the use of 'perforations' used in conjunction with the multi-laminate layers – the usage pertains to removing the outer gas-impermeable layer (lid) to allow air to flow through these perforations and gas permeable layers. The perforations of Kocher are shown in Figure 6 and described in Column 17. The perforations 66 extend thru multiple layers so that when the gas-impermeable lid is delaminated and removed (See Figure 7) the air can flow into the package via the perforations as well as the gas-permeable layer. This provides a 'swift ingress of atmospheric

oxygen' (col. 17, lines 57)

With respect to claim 2, Kocher does not disclose a polymeric material having drill holes in a registered target area in a manner as to control the atmospheric conditions as recited in claim 1. The rejection of dependent claim 2 is traversed for at least the reasons presented herein.

Applicant further notes that it has already been established that the object of Kocher is to employ holes to establish an ambient air atmosphere. The Office has acknowledged that Kocher does not control the atmosphere in the packaging nor does it improve any shelf life of respiring fruits and vegetables. The microperforations of Kocher are intended to quickly establish an ambient air state in the package, and while there is a transitional period before obtaining the ambient air state – there is no control intended or possible with respect to Kocher.

The reference by the Office for Kocher Col 1 lines 30-31 in the background section does not support the Office's contention that Kocher perforations are intended for longer shelf life. Taken in proper context, the paragraph refers to the central processing and packaging of meats instead of cutting the meat in each supermarket. This central processing would provide convenience to the store managers, where labor shortages are common, and provide a longer shelf-life - with no reference to microperforations. "Historically, large sub-primal cuts of meat have been butchered and packaged in each supermarket. This arrangement has long been recognized to be inefficient and expensive. It would instead be preferable to butcher and package the meat at a central processing facility which benefits from economies of scale, and then ship the packaged meat to benefits from economies of scale, and then ship the packaged meat to individual supermarkets or other retail outlets such as is done, for example, with many poultry products. It is believed that central processing of meat would also lead to a higher quality, more sanitary product with a longer shelf-life than meat which is butchered and packaged in individual supermarkets." Thus the Applicant contends that Kocher does not support the allegation by the Office that the microperforated packaging is intended for longer shelf life. Claim 2 is traversed for at least the reasons presented herein.

With respect to claim 3, Kocher does not disclose a polymeric material having drill holes in a registered target area in a manner as to control the atmospheric conditions as recited in claim 1. The rejection of claim 3 is traversed for at least the reasons presented herein.

With respect to claim 4, Kocher does not disclose a polymeric material having drill holes in a registered target area in a manner as to control the atmospheric conditions as recited in claim 1. The rejection of dependent claim 4 is traversed for at least the reasons presented herein.

With respect to claim 9, Kocher does not disclose a polymeric material having drill holes in a registered target area in a manner as to control the atmospheric conditions as recited in claim 1. Furthermore, Kocher defines its container as follows (Column 6, line 26): "As used herein, the phrase "product support member" refers to a component of a package on or in which a product is disposed. Meat products are typically disposed in a tray-like package component comprising, e.g., expanded polystyrene sheet material which has been thermoformed into a desired shape, for supporting the meat product. A product support member preferably includes a cavity into which the product is disposed and a peripheral flange which provides a sealing surface for attachment of a lid to the support member to thereby enclose the product within the cavity." Applicant notes that the Office does not provide any support for a semi-rigid container with a thickness greater than 25 mil as recited in claim 9. The rejection of dependent claim 9 is traversed for at least the reasons presented herein.

With respect to claim 12, Kocher does not disclose a polymeric material having drill holes in a registered target area in a manner as to control the atmospheric conditions as recited in claim 1. Applicant also notes that Greengrass does not encompass or describe a registered target area and therefore does not include these further aspects related thereto. The rejection of dependent claim 12 is traversed for at least the reasons presented herein.

With respect to claims 13 and 21, Kocher does not disclose a polymeric material having drill holes in a registered target area in a manner as to control the atmospheric conditions as recited in claim 1. Claim 13 has been canceled and incorporated into claim 1. The rejection of dependent claim 21 is

traversed for at least the reasons presented herein.

With respect to claim 5-6, 14 and 22, the Office rejects the claims based on Kocher with respect to the oxygen flux rate and carbon dioxide transmission rate. However, the Office already withdrew this rejection based upon the Response dated 2/24/04. Applicant refers the Office to the detailed explanation and arguments of that prior Response as the Applicant believes that this rejection was already traversed and allowability noted. More specifically, on page 2 of the Office Action, the "35 U.S.C. 103(a) rejection of claims 5-6, 14 and 22 as being unpatentable over Kocher et al (U.S. Patent No. 5,919,547), of record on page 3 of the previous Action, is withdrawn." It is unclear how the combination with Greengrass now resurrects these withdrawn rejections as Greengrass also does not describe oxygen flux or carbon dioxide transmission.

The Office references Col 17, lines 66-67; and Col 18, lines 1-5 – however these refer to various sizing of the microperforations – there is no description of any sort for oxygen flux rate /carbon dioxide transmission rate. Kocher describes microperforation size, which is in the range of 5-250 microns, however there is nothing to indicate how or why Kocher would control the package atmosphere. Kocher desires to use some sized holes, with some shape and aspect ratio, somewhere on the lid and in some unknown quantity or number with the overall purpose being to quickly achieve ambient air atmosphere (20.9% O_2/0.03% CO_2). Even if one were to employ any of the size ranges provided in Kocher, it still does not support any finding for controlling the oxygen flux rate from 200 cc/day-atm to 1,500,000 cc/day – atm and a carbon dioxide transmission rate that is 3.4 to 4.0 times greater than the oxygen transmission rate as noted in claim 5, 6, 14 and 22. The control requires some indication that the number/size/shape/aspect ratio was accounted for to establish the control of the atmosphere for the optimum atmospheric condition and that the user had knowledge of a specific number for obtaining the optimum atmospheric condition. Claim 5 has been canceled and incorporated into Claim 1.

Kocher is seeking to let ambient air into the container and establish an ambient atmosphere. Kocher is not seeking to establish certain optimum atmospheric conditions according to established O_2 and CO_2 concentrations different then ambient. There is no reference to

establishing any sort of specific oxygen/carbon dioxide concentrations once the sealed perforations are exposed – the interim period during which the Kocher product is seeking ambient air used does not establish control of the optimum atmospheric conditions using the perforations, and the ideal perforations of Kocher are "large enough to permit the passage of atmospheric gas therethrough (oxygen, nitrogen, carbon dioxide), but small enough to prevent the passage of liquids or dirt."

The Office takes official notice that establishing an oxygen flux rate and carbon dioxide flux would be readily determined through routine optimization by altering the microperforation size for a desired oxygen flux and carbon dioxide transmission rate. Applicant respectfully disagrees and requests that the Office find a prior reference to support this official notice. If it were obvious, then it should be easy for the Office to find a reference that suggests modifying Kocher to include the control of the atmosphere using microperforations as described in the present invention. Greengrass does not provide such teachings. And, the 'routine optimization' referenced by the Office in concluding that it would have been obvious to vary the oxygen flux and carbon dioxide flux is not supported by the 'desired end result' of Kocher and is therefore not in accordance with those teachings.

The Office is kindly reminded that "assertions of technical fact in areas of esoteric technology must always be supported by citation of some reference work" and "allegations concerning specific knowledge of the prior art, which might be peculiar to a particular art should also be supported." MPEP § 2144.03. The Applicant notes that a reference that merely discloses or suggests the general concept of perforations in plastic that allow air to flow through the holes is not sufficient to establish a prima facie case of obviousness for microperforations designed to control the flux rate to establish a certain optimum atmosphere for the packaged produce. In other words, the reference or references provided by the Office must disclose or suggest using the size/shape/number/aspect ratio (or some combination thereof) of the microperforations to control the atmospheric conditions according to the oxygen flux and carbon dioxide transmission rates as defined by the Applicant's claim 5, 6, 14 and 22. And, there would need to be sufficient description of the desired end result that would provide an optimal atmosphere for the packaged

produce. There are no references that provide the desired end result for which the user would be using such routine optimization and no references that describe the oxygen flux/carbon dioxide transmission rates.

If the Office is instead referring to Kocher Col 5 lines 65-67 and Col 6, lines 1-7, this section refers to the use of 1000 cc O_2/m^2-day - which is not a flux of 1 cc/day-atm. The Applicant has already clarified the difference between OTR and flux and it is also explained in detail in the patent application. Furthermore, as already explained in detail – the object of Kocher is to employ holes to establish an ambient air atmosphere. There is no description or inference to controlling the atmospheric condition within the package to anything other than ambient. While the Office may feel inclined to impart elements of the present invention into this reference – there is simply no basis for the conclusions of the office. Applicant submits that Office has no basis or support to establish that Kocher controls the flow of gases – once the delamination occurs, the oxygen is intended to quickly turn meat red. (col. 18, lines 64-67; col. 19 lines 1-10) There is nothing in Kocher to employ perforations to control and maintain atmospheric conditions and no teaching to support such a finding.

Finally, with respect to obviousness, there is an inventor declaration along with multiple exhibits filed 10/18/2002 that provide exemplary secondary considerations that the Applicant would like to be considered before the Office summarily concludes that control of atmospheric conditions via microperforations is obvious. The success of the product in the marketplace is yet another indicator that such a conclusion is unfounded. The rejection of dependent claims 5-6, 14 and 22 are traversed for at least the reasons presented herein.

The Office has rejected claim 7 and 10-11 under 35 U.S.C. 103(a) as being unpatentable over Greengrass in view of Kocher (US Patent 5,919,547) and further in view of Porchia (U.S. Patent No. 5,492,705). Applicant has carefully considered the Office rejections and respectfully submits that the claims, as supported by the arguments herein, are distinguishable from the cited references alone or in combination.

With respect to claims 7 and 10-11, Greengrass does not disclose a polymeric material having drill holes in a registered target area in a manner as to control the atmospheric conditions as recited in claim 1. The Office acknowledges also that Kocher does not disclose a microperforated bag nor a registered target within one-quarter distance from the top seal.

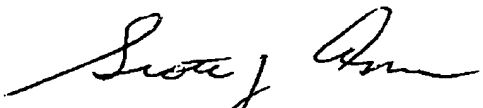
The Office states the Porchia teaches use of a microperforated bag for controlling weight loss with the microperforations in the top quarter of the bag. The present invention is not concerned with the weight loss of fruit. Porchia, describes a packaging bag with microholes throughout that is "independent of product, shape, amount and transpiration characteristics of stored produce as opposed to controlled atmosphere which generally is designed for each specific packaged product." (col. 2, Lines 19-22) Thus, Porchia acknowledges that it is not intended for controlling atmospheric conditions. Regarding location in a registered target area as described in the present invention, Porchia helps by defining their distribution. "By "uniformly distributed" it is meant that the microholes are substantially identically and substantially evenly spaced apart from each other over the entire surface area of the web film or bag." (col. 4, lines 37-40) "To obtain the beneficial effects of the present invention, the microholes should be of a uniform size and uniformly distributed throughout the surface of the bag." (col. 4, lines 34-36).

The Office points to Figure 1 of Porchia as establishing microperforations in a target area – but Figure 1 shows the microperforations over the entire bag which is further supported by the Porchia specification, and not exclusively in a registered target area as described and claimed in the present invention.

Therefore, Porchia does not control and maintain the oxygen and carbon dioxide concentration inside the bag and they also do not register the microperforations in a small identifiable target area anywhere on the bag as in the present invention. Taken alone or in combination with Kocher, these references do not disclose, suggest or otherwise provide a motivation to practice the claims of the present invention. The rejection of claims 7 and 10-11 is traversed for at least the reasons presented herein.

Applicant believes that these arguments and amendments distinguish the cited references and the application should be in condition for allowance. Applicant respectfully requests speedy consideration, as a Notice of Appeal has been filed for review and consideration of this application.

Respectfully submitted,



Vernon C. Maine, Reg. No. 37,389
Scott J. Asmus, Reg. No. 42,269
Neil F. Maloney, Reg. No. 42,833
Andrew P. Cernota, Reg. No. 52,711
Attorneys/Agents for Applicant

Cus. No. 24222
Maine & Asmus
PO Box 3445
Nashua, NH 03061-3445
Tel. No. (603) 886-6100, Fax. No. (603) 886-4796
patents@maineandasmus.com